CONSTRUCTION ENGINEERING (CONE)

CONE 8166  WOOD/CONTEMPORARY MATERIALS DESIGN (3 credits)
Design of structural timber, beams, columns, and connections. Introduction to applicable design philosophies and codes. Overview of materials design. Masonry, aluminum, and contemporary materials such as plastics and fiber reinforced systems and composite material groups. Design considerations, cost and constructability analysis. (Cross-listed with CONE 4160)
Prerequisite(s)/Corequisite(s): CIVE 341

CONE 8176  FORMWORK SYSTEMS (3 credits)
Design of structural timber, beams, columns, and connections. Introduction to applicable design philosophies and codes. Overview of materials design, masonry, aluminum, and contemporary materials such as plastics and fiber reinforced systems and composite material groups. Design considerations, cost and constructability analysis. (Cross-listed with CONE 4170)
Prerequisite(s)/Corequisite(s): CONE 4160; Pre/Co-req.: CIVE 441

CONE 8210  CONSTRUCTION RISK ASSESSMENT AND MANAGEMENT (3 credits)
The overall process of hazards risk management (risk identification, risk analysis, risk assessment, risk communication), risk based decision making and risk mitigation. Classification of building stock, defining vulnerability, risk assessment methods, assessing economic losses and cost benefit analysis. Case studies will be used to demonstrate the application of risk management principles/techniques in practice.
Prerequisite(s)/Corequisite(s): STAT 3800. Not open to non-degree graduate students.

CONE 8506  SUSTAINABLE CONSTRUCTION (3 credits)
Sustainable construction and its application to the green building industry. Topics include: the LEED certification process, sustainable building site management, efficient wastewater applications, optimizing energy performance, indoor environmental issues, performance measurement/verification, recycled content and certified renewable materials. (Cross-listed with CONE4500)

CONE 8596  INTRODUCTION TO BUILDING INFORMATION MODELING (3 credits)
This course instructs CAD users on the effective use of Building Information Model (BIM) for integration of design, document and construction estimate. Topics include: model-based 3D design, file formats, interoperability, and MEP modeling. (Cross-listed with CONE 4590)
Prerequisite(s)/Corequisite(s): CNST 1120, or Graduate standing in AE, CIVE, CNST or CONE.

CONE 8666  HEAVY &/OR CIVIL ESTIMATING (3 credits)
Estimating techniques and strategies for heavy and/or civil construction. Unit pricing, heavy and civil construction takeoffs and estimating, equipment analysis, overhead cost and allocations, estimating software and government contracts. (Cross-listed with CONE4660)
Prerequisite(s)/Corequisite(s): CONE2410 and CONE3780 and CONE4850

CONE 8816  HIGHWAY & BRIDGE CONSTRUCTION (3 credits)
The methods and equipment required in the construction of roads and bridges. Methods and equipment necessary for roads and bridges. Substructure and superstructures, precast and cast-in-place segments, and standard and specialized equipment. (Cross-listed with CONE4810)
Prerequisite(s)/Corequisite(s): CONE2410 or CONE3780